

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Product name : ZAM PLUS HEUCOPHOS ZAM-PLUS  
 CAS-No. : Proprietary  
 Product code : ZAMPLUS

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Pigment White 32 (CAS No.: 7779-90-0)  
 Use of the substance/mixture : Corrosion inhibitor

#### 1.3. Supplier

Heucotech Ltd.  
 99 Newbold Road  
 Fairless Hills, PA 19030 - USA  
 T (215) 736-0712 - F (215) 736-1699  
[regulatory@heubachcolor.com](mailto:regulatory@heubachcolor.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC 1(800) 424-9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Respiratory sensitization, Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Carcinogenicity Category 2	H351	Suspected of causing cancer
Hazardous to the aquatic environment - Acute	H400	Very toxic to aquatic life
Hazard Category 1		
Hazardous to the aquatic environment - Chronic	H410	Very toxic to aquatic life with long lasting effects
Hazard Category 1		

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :  
 H317 - May cause an allergic skin reaction  
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 H351 - Suspected of causing cancer  
 H400 - Very toxic to aquatic life  
 H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :  
 P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
 P272 - Contaminated work clothing must not be allowed out of the workplace  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P284 - [In case of inadequate ventilation] wear respiratory protection  
 P302+P352 - If on skin: Wash with plenty of water/...  
 P304+P341 - If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing  
 P308+P313 - If exposed or concerned: Get medical advice/attention

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P321 - Specific treatment (see ... on this label)  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P342+P311 - If experiencing respiratory symptoms: Call a poison center/doctor/...  
P363 - Wash contaminated clothing before reuse  
P391 - Collect spillage  
P405 - Store locked up  
P501 - Dispose of contents/container in a safe manner in accordance with local, regional and national regulations.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Trizinc diphosphate	(CAS-No.) 7779-90-0	50 - 80	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Molybdenum trioxide	(CAS-No.) 1313-27-5	< 1	Acute Tox. 3 (Oral), H301 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

### 5.2. Specific hazards arising from the chemical

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to Section 8 "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

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### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.  
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Trizinc diphosphate (7779-90-0)

Not applicable

#### Molybdenum trioxide (1313-27-5)

Not applicable

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid  
Appearance : White powder.  
Color : White  
Odor : Odorless  
Odor threshold : No data available  
pH : 6.5 - 8  
Melting point : No data available  
Freezing point : Not applicable  
Boiling point : No data available  
Flash point : Not applicable  
Relative evaporation rate (butyl acetate=1) : No data available

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Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: Not applicable
Specific gravity / density	: 3.5 g/cm <sup>3</sup>
Solubility	: Slightly soluble.
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Trizinc diphosphate (7779-90-0)	
LD50 oral rat	> 5000 mg/kg
Molybdenum trioxide (1313-27-5)	
LD50 oral rat	125 mg/kg
LC50 inhalation rat (mg/l)	> 5840 mg/m <sup>3</sup> (Exposure time: 4 h)
ATE US (oral)	125 mg/kg body weight

Skin corrosion/irritation	: Not classified pH: 6.5 - 8
Serious eye damage/irritation	: Not classified pH: 6.5 - 8
Respiratory or skin sensitization	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.

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Molybdenum trioxide (1313-27-5)	
IARC group	2B - Possibly carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified  
Specific target organ toxicity – single exposure : Not classified

Molybdenum trioxide (1313-27-5)	
Specific target organ toxicity – single exposure	May cause respiratory irritation.

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified  
Viscosity, kinematic : No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

### 12.2. Persistence and degradability

Trizinc diphosphate (7779-90-0)	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

Trizinc diphosphate (7779-90-0)	
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

### Transport by sea

Transport document description (IMDG) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III  
UN-No. (IMDG) : 3077  
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles  
Packing group (IMDG) : III - substances presenting low danger  
Limited quantities (IMDG) : 5 kg

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Marine pollutant

: Yes



### Air transport

Transport document description (IATA) : UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III  
UN-No. (IATA) : 3077  
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.  
Class (IATA) : 9 - Miscellaneous Dangerous Goods  
Packing group (IATA) : III - Minor Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Trizinc diphosphate	CAS-No. 7779-90-0	50 - 80%
Zinc oxide (ZnO)	CAS-No. 1314-13-2	10 - 25%
Molybdenum trioxide	CAS-No. 1313-27-5	< 1%
Phthalic anhydride	CAS-No. 85-44-9	< 1%

#### Trizinc diphosphate (7779-90-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Molybdenum trioxide (1313-27-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

##### Trizinc diphosphate (7779-90-0)

Listed on the Canadian DSL (Domestic Substances List)

##### Molybdenum trioxide (1313-27-5)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

##### Trizinc diphosphate (7779-90-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Molybdenum trioxide (1313-27-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

##### ZAM PLUS HEUCOPHOS ZAM-PLUS (Proprietary)

Components listed on the Canadian DSL (Domestic Substances List) inventory.  
Components listed on the United States TSCA (Toxic Substances Control Act) inventory.

##### Trizinc diphosphate (7779-90-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Poisonous and Deleterious Substances Control Law  
Listed on CIGR (Turkish Inventory and Control of Chemicals)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)

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### Molybdenum trioxide (1313-27-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Molybdenum trioxide(1313-27-5)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

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Revision date : 05/30/2019

Full text of H-phrases:

H301	Toxic if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur  
\* - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical Hazard : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : F  
F - Safety glasses, Gloves, Synthetic apron, Dust respirator

SDS US (GHS HazCom 2012)

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